DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-013486
Date Inspected: 28-Apr-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1500
Location: Job Site

CWI Name: Bernard Docena, Steve McConnell, William Pickett

CWI Present: ☑ Yes ☐ No

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG 3W/4W-A, 1W/2W-E,

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 1W/2W-E & D, 3W/4W-A and the following observations were made:

3W/4W-A

Upon the arrival of the QA Inspector it was observed the above identified weld joint had been previously completed. The QA Inspector noted the Smith Emery (SE) Quality Control (QC) Inspector Bnifacio Daquinag performing visual testing of the completed weld joint. The QA Inspector noted the QC Inspector had marked up or indicated several areas where additional welding or grinding was required. The QA Inspector noted the QC Inspector indicated the areas utilizing a distinguishing marking directly on the weld reinforcement or adjacent to the weld joint. The QA Inspector randomly observed the American Bridge/Fluor (ABF) welder identified as Kenneth Chappell begin performing shielded metal arc welding in the areas indicated by the QC Inspector. The QA Inspector randomly observed the ABF welder performing the SMAW repair on an area approximately 300mm in length. The QA Inspector noted the area appeared to have unacceptable under fill and was previously indicated by the QC Inspector. The ABF welder was utilizing 1/8” E7018 low hydrogen electrodes with 142 Amps. The QA Inspector noted the minimum required preheat and the amperage appeared to be in general compliance with approved WPS identified as ABF-WPS-D1.5-1040B. The QA Inspector randomly observed the ABF welder spend the remainder of the QA Inspectors shift performing the SMAW repairs. The QA Inspector randomly observed the ABF welder Jordan Hazelaar begin grinding and removing the weld reinforcement of the above identified weld joint. The QA Inspector noted the ABF welder was utilizing a grinding machine that uses a belt and travels the joint on wheels. The QA Inspector noted the weld reinforcement was ground nearly flush in approximately 30

minutes.

1W/2W-E1
The QA Inspector randomly observed the ABF welders had previously started the induction heating blankets to ensure the minimum required preheat of 150°F was achieved prior to welding. The QA Inspector randomly verified utilizing a 150°F temperature indicating marker and noted the minimum required preheat had been achieved. The QA Inspector noted the splice plates were removed in weld segment E1 to allow the FCAW machine to travel the full length of the weld joint. The QA Inspector observed the ABF welder to be utilizing a semi automated FCAW track system for welding the above identified weld joint. The QA Inspector randomly observed the SE QC Inspector identified as Bernard Docena set the FCAW machine to the parameters of the approved WPS. The QA Inspector randomly observed the FCAW parameters were 254 Amps, 24.1 Volts and a travel speed of 250mm/min. The QA Inspector randomly observed the ABF welder Song Toa Huang begin the FCAW fill pass, once the semi automated track system reached a certain point the ABF welder Huang Jin Quan would observe the welding arc for the remainder of the weld. The QA Inspector noted the ABF welders did not complete the weld segment E1 on the QA Inspectors shift.

1W/2W-D/S (stiffeners)
The QA Inspector randomly observed the ABF welder James Zhen performing SMAW joint restoration or butter passes in the vertical position. The QA Inspector noted, due to the fit up of the 1W/2W orthotropic box girders, the root openings of the stiffeners were excessive. The QA Inspector noted 7mm maximum allowed root opening and most of the root openings were in excess of 13-14mm. The QA Inspector observed the contractor has elected to perform joint restoration to restore the root openings and bevel angles to the original joint configuration. The QA Inspector randomly observed the ABF welder had installed round bar stock in the double V-groove opposite the side where joint restoration is being performed. The QA Inspector noted the round bar stock is place in the groove vertically and SMAW butter passes are perform on the opposite side. The QA Inspector noted once the weld joint has been restored to the original joint configuration, the round bar stock will be removed and welding can be performed as described in the approved WPS identified as ABF-WPS-D1.5-2010-C. The QA Inspector randomly observed the above identified welder was performing SMAW butter passes on all three of the above identified weld joints during the QA Inspectors shift. The QA Inspector randomly observed the ABF welder to be utilizing 1/8” E7018 low hydrogen electrodes with 135 Amps. The QA Inspector noted the SMAW parameters appeared to be in general compliance with the contract requirements.

The QA Inspector spent the remainder of the shift updating the and recording the weld joints which have been completed, repairs which have been made, repairs that require welding and the overall progress of the ABF production welding. The QA Inspector observed all weld joints from 1W/2W, 2W/3W, 3W/4W and 1E/2E, 2E/3E, 3E/4E. The QA Inspector updated the production and QA NDT log and tracking chart.

Summary of Conversations:
No pertinent conversation noted.
Comments
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

WELDING INSPECTION REPORT

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Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer